

AMENDMENTS TO THE CLAIMS

This listing will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A catalytic secondary reforming process, for the production of synthesis gas, the process comprising the successive steps of:

feeding a first gas flow comprising hydrocarbons and a second gas flow comprising oxygen into a reforming reactor, at least one of said gas flows being fed into said reactor in a predetermined feed direction substantially coaxial[[,]] to a longitudinal axis of said reactor, wherein said first gas flow comprising hydrocarbons and said second gas flow comprising oxygen are kept separate and coaxial from one another for an initial portion of said reactor and flow along said predetermined feed direction in said initial portion of said reactor;

imparting a rotating swirling motion about said predetermined feed direction to at-least-one of said gas flow[[s]] comprising hydrocarbons or to said gas flow comprising oxygen or separately to both said gas flow comprising hydrocarbons and said gas flow comprising oxygen; and

mixing said gas flows in said reactor downstream of said initial portion of said reactor, said hydrocarbons of said first gas flow being substantially simultaneously oxidized by the oxygen of said second gas flow during the mixing of the gas flows.

2. (Previously Presented) The catalytic secondary reforming process according to claim 1, wherein said rotating swirling motion is imparted to said second gas flow comprising oxygen.

3. (Cancelled)

4. (Previously Presented) The catalytic secondary reforming process according to claim 1, wherein said second gas flow comprising oxygen is inside and coaxial to said first gas flow comprising hydrocarbons.

5. (Previously Presented) The catalytic secondary reforming process according to claim 2, wherein a rotary swirling motion is given to said first gas flow comprising hydrocarbons, said rotary swirling motion of said first flow being in an opposite direction with respect to said rotary swirling motion of said second flow.

6. (Previously Presented) The catalytic secondary reforming process according to claim 1, wherein said mixing step takes place by giving both gas flows a rotary swirling motion about said predetermined feed direction, the rotary swirling direction of said first flow being in an opposite direction with respect to the rotary motion of said second flow.

7-14. (Cancelled)